(3128-00001)

**** CONFIDENTIAL **** **** PREDECISIONAL DOCUMENT ****

SUMMARY SCORESHEET FOR COMPUTING PROJECTED HRS SCORE

SITE NAME: Treasure Island Naval Station		
CITY, COUNTY: San Francisco, San Francisco		
EPA ID #: CA7170023330	EVALUATOR: 1	Howard Edwards
PROGRAM ACCOUNT #: FCA1843PAA	DATE: 9-	-26-91
Lat/Long: 37°50'N/122°22'30"W T/R	/S: <u>T1South</u>	,R5West,S 24 & 25
THIS SCORESHEET IS FOR A: PA S	si	LSI
SIRe PA Redo Other (Specify) _Fe		
RCRA STATUS (check all that apply):		
X Generator Small Quantity Generator	Transport	ter TSDF
Not Listed in RCRA Database as of (date of	printout)	/ /
STATE SUPERFUND STATUS:		
BEP (date)/ / WQARF	(date)/	/
X No State Superfund Status (date) Jan./ /		
	S pathway	S ² pathway
Groundwater Migration Pathway Score (Sgw)	*	
Surface Water Migration Pathway Score (S _{SW})	100	10,000
Soil Exposure Pathway Score (S _S)	11.54	133.2
Air Migration Pathway Score (S _a)	24.33	591.9
$s_{gw}^2 + s_{sw}^2 + s_{s}^2 + s_{a}^2$	**********	10,725.1
$(S_{gW}^2 + S_{sW}^2 + S_{s}^2 + S_a^2)/4$	**************************************	2,681.3
$\sqrt{(S_{gw}^2 + S_{sw}^2 + S_{s}^2 + S_a^2)/4}$	***********	51.78

*Pathways not assigned a score (explain):
No groundwater use within 4 miles.
he/tins/hrs

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET

Factor Categories and Factors

DRINKING WATER THREAT

DKTNK	ING WATER THREAT				
	Likelihood of Release	Maximum Value	Projected Score	Rationale	Data Qual.
1. 2.	Observed Release Potential to Release by Overland Flow	550			
	2a. Containment 2b. Runoff	10 25			
	<pre>2c. Distance to Surface Wate 2d. Potential to Release by Overland Flow [lines</pre>	r 25			
3.	2a x (2b+2c)] Potential to Release by Flood	500			
	3a. Containment (Flood) 3b. Flood Frequency	10 50			
4.	3c. Potential to Release by Flood (lines 3a x 3b) Potential to Release	500			
_	(Lines 2d+3c, subject to a maximum of 500)	500			
5.	Likelihood of Release (Higher of lines 1 or 4)	550			
	Waste Characteristics				
6. 7. 8.	Toxicity/Persistence Hazardous Waste Quantity Waste Characteristics	a a			
	(lines 6 x 7, then assign a value from Table 2-7)	100			
	Targets				
9. 10.	Nearest Intake Population	50	0	SW-1	H
	10a. Level I Concentrations 10b. Level II Concentrations	b	0		
	10c. Potential Contamination 10d. Population (lines 10a + 10b+10c)		0		
11. 12.	Resources Targets (lines 9+10d+11)	5 b	0		
	Drinking Water Threat Score				
13.	Drinking Water Threat [(Lines 5 x 8 x 12)/82,500, subject to a maximum of 100]	100	0		

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET (CONTINUED)

Factor Categories and Factors

HUMAN FOOD CHAIN THREAT				
	Maximum	Projected		Data
Likelihood of Release	Value	Score	Rationale	Qual.

14. Likelihood of Release				
(Same value as line 5)	550	550	SW-2	E

Waste Characteristics

15.	Toxicity/Persistence/		0		
	Bioaccumulation	a	5 X 10 ⁸	SW-3	E
16.	Hazardous Waste Quantity	a	100	SW-4	E
17.	Waste Characteristics				

(Toxicity/Persistence x				
Hazardous Waste Quantity x				
Bioaccumulation, then assign				
a value from Table 2-7)	1,000	320		
		The second secon	A STATE OF THE PARTY OF THE PAR	Control of the Contro

Targets

18.	Food Chain Individual	50	45	SW-5	E
19.	Population				
	19a. Level I Concentrations	b	0	SW-6	E
	19b. Level II Concentrations	b	0		
	19c. Potential Human Food				
	Chain Contamination	b	0.31	SW-7	H
	19d. Population (lines				
	19a+19b+19c)	b	0.31		
20.	Targets (lines 18+19d)	b	45.31		

Human Food Chain Threat Score

21.	Human Food Chain Threat			
	[(Lines $14 \times 17 \times 20$)/82,500			
	subject to a maximum of 100]	100	96	

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET (CONTINUED)

Factor Categories and Factors

TABLE		CARRA	ENTA	LESSES	TO A CT
PLIM V	F 80 100 1	2 E T 1 E S 1	25 FM 2 A	E 19-6	BE BE ALL
THE R		WE SE			

RNATK	ONMENTAL THREAT				
	Liklelihood of Release	Maximum Value	Projected Score	Rationale	Data Qual.
22.	Likelihood of Release (Same value as line 5)	550	550	SW-2	E
	Waste Characteristics				
23.	Ecosystem Toxicity/Persisten Bioaccumulation Hazardous Waste Quantity	ce/ a a	5 X 10 ⁸	SW-3 SW-4	E
25.	Waste Characteristics (Ecosystem Tox./Persistence: Hazardous Waste Quantity x Bioaccumulation, then assign a value from Table 2-7)		320		
	Targets				
26.	Sensitive Environments ^d 26a. Level I Concentrations 26b. Level II Concentrations 26c. Potential Contamination 26d. Sensitive Environments (lines 26a+26b+26c) Targets (Value from line 26d)	n b	100	SW-8	<u>E</u>
	Environmental Threat Score				
28.	Environmental Threat Score [(lines 22 x 25 x 27)/82,500 subject to a maximum of 60]	60	60		

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORE FOR A WATERSHED

29. Watershed Score C 100 [(Lines 13+21+28), subject to a maximum of 100] 100

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORE

30. Component Score (Sof) (Highest score from Line 29 C for all watersheds evaluated, 100 subject to a maximum of 100) 100

a Maximum value applies to waste characteristics category.

- b Maximum value not applicable.
- c Do not round to the nearest integer.
- d Use additional tables

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT CALCULATIONS

12. Drinking Water Targets

Actual Contamination

	Contaminant Detected	Concentration (Note Units)	Benchmark	(A) Apportion Population Intake Sen	n		(A	× B)
		on.		n (A x B) 1		l II		
Type of Water Body					opula	(A) ion-Weight ation Valuable 4-14)		
< 10 cfs				-				
10 to 100 cf	Es			_				
> 100 to 1,0	000 cfs			_				
> 1,000 to 1	10,000 cfs			-				
> 10,000 to	100,000 cfs			_			_	
Shallow ocea (depth < 20								
Moderate oce (depth 20 to				_			_	
Deep ocean z (depth > 200				-				
3-mile mixin flowing rive	ng zone in quie er <u>></u> 10 cfs	t		_				
Sum (A) Potential Co	ontamination =	<u>Sum (A)</u> =		_				

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT CALCULATIONS (CONTINUED)

20. Food Chain Targets

Actual Contamination

Fishery	Contaminant	Concen- tration	Benchmark	(A) Assigned Population Value (Table 4-18)	(B) Level [*] Multiplier	(A x B
* Level M	Multipliers			Sum (A x B) Sum (A x B)		

Potential Contamination

Fishery	Production (lb/yr)	(P) Assigned Population Value (Table 4-18)	Average Stream Flow at Fishery (cfs)	(DW) Dilution Weighting Factor (Table 4-13)	(P x DW)
S F BAY	11,000,000	31,000	bay	.0001	3.1
				Sum (P x DW)	3.1

Fisheries Subject to Potential Contamination =
$$\frac{\text{Sum (P x DW)}}{10}$$
 = $\frac{0.31}{10}$

⁻ Level I = 10

⁻ Level II = 1

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT CALCULATIONS (CONTINUED)

27. Environmental Targets

Actual Contamination

0	Concen- tration Benchmark	(A) Assigned Value (Table 4-23 and/or 4-24)	(B) Level Multiplier*	(A x B)
Least tern unknown or Brown pelican or Perigrin Falcon	level2 unknown	100	1	100
* Level Multipliers - Level I = 10 - Level II = 1 Potential Contaminat:	Sum	(A x B) Level (A x B) Level		100
Sensitive Environment or Wetland Length (miles)	(A) Assigned Value	Stream Flow Weig	(DW) Dilution ghting Factor Table 4-13)	(A x DW)
		Sur	m of (A x DW)	

he/tins/hrs

Potential contamination = Sum (A x DW) =

SOIL EXPOSURE PATHWAY SCORESHEET

Factor Categories and Factors

RESID	ENT POPULATION THREAT				
	<u>Likelihood of Exposure</u>	Maximum Value	Projected Score	Rationale	Data Qual.
1.	Likelihood of Exposure	550	550	_SE-1	
	Waste Characteristics				
2. 3. 4.	Toxicity Hazardous Waste Quantity Waste Characteristics Targets	a a 100	10,000 10 18	SE-2 SE-3	E H
5.	Resident Individual	50	45	SE-4	E
6.	Resident Population 6a. Level I Concentrations 6b. Level II Concentrations 6c. Resident Population	b b	10		E
7. 8. 9.	(lines 6a+6b) Workers Resources Terrestrial Sensitive	b 15 5	10 0	SE-6 SE-7	E
10.	Environments Targets (lines 5+6c+7+8+9)	c b	<u>0</u> <u>65</u>	SE-8	
	Resident Population Threat So	core			
11.	Resident Population Score (lines 1 x 4 x 10)	b	940,500		
NEARB	Y POPULATION THREAT				
	<u>Likelihood of Exposure</u>				
12. 13. 14.	Attractiveness/Accessibility Area of Contamination Likelihood of Exposure	100 100 500	25 60 50	SE-9 SE-10	
	Waste Characteristics				
15. 16. 17.	Toxicity Hazardous Waste Quantity Waste Characteristics	a a 100	10,000 10 18	SE-2 SE-3	
	Targets				
18. 19. 20.	Nearby Individual Population Within 1-Mile ^e Targets (lines 18+19)	1 b b	0 13.0 13.0	SE-4 SE-11	

SOIL EXPOSURE PATHWAY SCORESHEET (CONTINUED)

Factor Categories and Factors

Nearby Population Threat Score	Maximum Value	Projected Score	Rationale Qual.
21. Nearby Population Threat (lines 14 x 17 x 20)	t b	11,700	
SOIL EXPOSURE PATHWAY SCORE			
22. Soil Exposure Pathway So (Ss), [lines (11+21)/82,	,500	11.54 d	

a Maximum value applies to waste characteristics category.

b Maximum value not applicable.

c No specific maximum value applies to this factor. However, pathway score based solely on sensitive environments is limited to a maximum of 60.

d Do not round to the nearest integer.

e Use additional tables.

SOIL EXPOSURE CALCULATIONS

20. Nearby Population Targets

Total Population Within Distance Ring	P) Distance- Weighted Population Values (Table 5-10)
3,001	130
Sum (P)	
	Within Distance Ring 3,001

Nearby Population Threat factor value $\frac{\text{Sum (P)}}{10} = \frac{13.0}{10}$

AIR MIGRATION PATHWAY SCORESHEET

Factor Categories and Factors

Li	ikelihood of Release	Maximum Value	Projected Score	Rationale	Data Qual.
1.	Observed Release Potential to Release	550	0	<u>A-1</u>	<u>H</u>
۷.	2a. Gas Potential 2b. Particulate Potential 2c. Potential to Release (higher of lines 2a	500 500	<u>500</u> <u>390</u>	A-2 A-3	E
3.	and 2b) Likelihood of Release	500	500		
٥,	(higher of Lines 1 or 2c)	550	500		
	Waste Characteristics				
4. 5. 6.	Toxicity/Mobility Hazardous Waste Quantity Waste Characteristics	a a	10,000	A-4 A-5	H
	(lines 4 x 5, then use Table 2-7)	100	18		
	Targets				
7.	Nearest Individual Population 8a. Level I Concentrations	50 s b	20	<u>A-6</u>	H
	8b. Level II Concentration 8c. Potential Contamination	ns _e b	192 192	<u>A-7</u>	H
9. 10.	8d. Population (8a+8b+8c) Resources Sensitive Environments	b 5	5	A-8	E
	10a. Actual Contamination 10b. Potential Contamination 10c. Sensitive Environment	ts	6	A-9	
11.	(lines 10a+10b) Targets (Lines 7+8d+9+10c)	c b	223		
Air Pa	athway Migration Score				
12.	Air Pathway Score (Sa) [(lines 3 x 6 x 11)/82,500]	100	24.33 d		

a Maximum value applies to waste characteristics category.

b Maximum value not applicable.

d Do not round to nearest integer.

e Use additional tables.

he/tins/hrs

c No specific maximum value applies to factor. However, pathway score based solely on sensitive environments is limited to a maximum of 60.

AIR PATHWAY CALCULATIONS

2. Potential to Release

Gas Potential to Release

	Source Type (Name)	Gas Containment Factor Value (Table 6-3)	Gas Source Type Factor Value (Table 6-4)	or Potential Factor Value		Gas Source Value
		(A)	(B)	(C)	(B+C)	A x (B+C)
1.	soil	10		17	17	170
2.	drum	10		17	17	170
3.	sludge	10	28	6	34	340
4.	landfill	10	33*	17	50	500
				to Release Fac ighest Gas Sour		

Particulate Potential to Release

	Source Type (Name)	Particulate Containment Factor Value (Table 6-9)	Particulate Source Type Factor Value (Table 6-4)	Particulate Migration Potential Factor Value (Figure 6-2)	Sum	Particulate Source Value
		(A)	(B)	(C)	(B+C)	A x (B+C)
1.	soil	10	0	17	17	170
2.	drums	10	0	17	17	170
3.	sledy depot	10	22	17	39	390
4.	landfill	10	22	17	39	390
				to Release Fac		

AIR PATHWAY CALCULATIONS (CONTINUED)

8. Potential Contamination

Distance (miles)	Total Population Within Distance Ring		(A) ance-Weighted Value (Table	
On a source (0)	0			
>0 to 0.25	>3,000		1,304	
>0.25 to 0.5				
>0.5 to 1				
>1 to 2	35,178		266	
>2 to 3	96,688		120	
>3 to 4	126,843		229	
	Sum of (A) =		1,919	
Air Potential Conta	Sum of (A) = mination Factor Value =	Sum of (A) = 10	1,919	
	mination Factor Value =			
	mination Factor Value = ronments nation			
10. <u>Sensitive Envi</u>	mination Factor Value =			(A + B)
10. Sensitive Envi Actual Contami Wetland or Type of Sensitive	mination Factor Value = ronments nation (A) Sensitive Environment Rating Value	(B) Wetland Rating Value		(A + B)
10. Sensitive Envi Actual Contami Wetland or Type of Sensitive	mination Factor Value = ronments nation (A) Sensitive Environment Rating Value	(B) Wetland Rating Value		(A + B)
10. <u>Sensitive Envi</u> Actual Contami Wetland or Type of Sensitive	mination Factor Value = ronments nation (A) Sensitive Environment Rating Value	(B) Wetland Rating Value		(A + B)
10. Sensitive Envi Actual Contami Wetland or Type of Sensitive	mination Factor Value = ronments nation (A) Sensitive Environment Rating Value	(B) Wetland Rating Value		(A + B)

AIR PATHWAY CALCULATIONS (CONTINUED)

Potential Contamination

Wetland or Type of Sensitive Environment	(A) Sensitive Environment Rating Value (Table 4-23)	(B) Wetland* Rating Value (Table 6-18)	Distance (miles)	(DW) Distance Weights (Table 6-15)	DW x (A + B)
Falcon	75		0.25	.25	18.75
Tern	75		0.25	.25	18.75
Pelican	75		0.25	.25	18.75
			Sum I	DW x (A + B)	56.25

Potential Contamination
Sensitive Environments Factor Value =
$$\underbrace{\text{Sum DW x (A + B)}}_{10}$$
 =

^{*} Only assign a Wetland Rating Value once for each wetland within a distance category.

HRS SCORESHEET RATIONALE: Treasure Island Naval Station EPA ID # CA7170023330

GROUNDWATER

* There is no utilization of groundwater within 4 miles of the site.

Groundwater underlying the site is brackish due to intrusion of bay water and is generally considered non-potable. (ref. NEESA-PA)

SURFACE WATER

- SW-1 There are no surface water bodies on either of the two islands that make up the site. The San Francisco Bay with surrounds the site is not utilized as a drinking water source. (ref. NEESA-PA)
- SW-2 There has not been any sampling of surface water bodies to determine whether a release has occurred. A release was projected based on the lack of containment, distance to surface water, and runoff characteristics. Documentation exists, that indicates that some wastes were directly deposited into the San Francisco Bay through storm drains from the site. (ref. NEESA-PA)
- SW-3 The types of wastes and contaminants deposited on site are mostly unknown. The value was determined based on a worst case situation using PCBs, and mercury as contaminants of concern. (ref. NEESA-PA)
- SW-4 The quantity of waste deposited is unknown. It does not appear likely that the waste quantity factor value would exceed 100 since the quantity value is so much less then 10,000. (ref. NEESA-PA)

WASTE	Quantity Value
1,440 cubic yards of sludge as waste steam: 16,000 cubic yards landfill	576
44,200 square feet contaminated soil	1.3
Total	583.7

Surface water (continued) SW-5 The site is situated in the midst of San Francisco Bay. The San Francisco Bay is a source of recreational and commercial fishing. Since sampling has not been done to determine whether the fishery is contaminated, Level II contamination to the Food Chain Individual is projected. (ref. NEESA-PA) SW-6 Since sampling of the fishery has not been done, the extent of the contamination has not been determined. (ref. NEESA-PA) Potential contamination is based on the following fish that are caught in the San Francisco Bay: herring, perch, sharks, jack smelt, white croger, striped bass, and other species. In addition, clams are also harvested in the San Francisco Bay. Approximately, 11,000,000 pounds of fish/shellfish are caught annually in the bay. This results in an assigned population value of 31,000. Multiplying this by a dilution factor for coastal tidal waters of .0001 and divided the product by 10 to determine the HRS potential contamination human food chain contamination factor value of 0.31. (ref. NEESA-PA and fish catch data) SW-8 The San Francisco Bay provides a habitat for federally listed endangered species. It has also been reported that three federally endangered species have been seen at TINS. FIT assumed that one of these endangered species' designated habitat areas may be on or adjacent to the waste sources on TINS. Since sampling has not been done to determine whether these environments are contaminated, Level II contamination to the habitat is projected. (ref. NEESA-PA) SOIL-EXPOSURE SE-1 Since work and residential areas were not identified, FIT projected that areas of contamination were likely located within 200 feet of a site work or residential areas. (ref. NEESA-PA) SE-2 The types of wastes and contaminants deposited on site is mostly unknown. The value was determined based on a worst-case situation using PCBs, and mercury as contaminants of concern. (ref. NEESA-PA) he/tins/rat

Soil exposure (continued) SE-3 Value was based on the projected Hazardous Waste Quantity of all identified areas of contamination from the NEESA-PA available to the soil-exposure pathway. The areas include the PCB storage area, fire training area, pesticide storage area, the old bunker area, refuse transfere area, auto hobby shop, seaplane maintenance area, army point sludge disposal area, and YBI landfill. Each of these areas have or potentially have uncontained contaminated soils within 2 feet of the surface. (ref. NEESA-PA) SE-4 Since work and residential areas were not identified, FIT projected that areas of concern with Level II contamination were likely located within 200 feet of a residential areas. Level I soil contamination does not appear to have yet been documented. Level II contamination has been documented. (ref. SSI and NEESA-PA) SE-5 Since work and residential areas were not identified FIT projected that 10 individuals reside within 200 feet of areas of Level II contamination. (ref. NEESA-PA) SE-6 FIT projects that between 100 and 500 individuals work within 200 feet of an area of contamination. This projection is base on the assumption that there is uniform worker distrubution throughout TINS (ref. NEESA-PA) SE-7 There does not appear to be any commercial agriculture, silviculture, or livestock production on the site. (ref. NEESA-PA) SE-8 There does not appear to be a terrestrial sensitive environment on the site, although three endangered species are known to occasionally use the site. (ref. NEESA-PA) SE-9 Waste source areas on TINS may be is slightly accesible to residents and employees who do not live or work within 200 feet of sources. Waste source area may have some public recreation use praticularly the hobby shop/transportation center area and the landfill areas. (ref. NEESA-PA) SE-10 FIT estimated 300,000 square feet of contamination. (ref. NEESA-PA) SE-11 Population is based on assumption that projected on-site residents are within 0.25 miles of contamination. (ref. NEESA-PA and facility contact) he/tins/rat

AIR A-1 Air sampling does not appear to have been preformed and therefore an observed release has not been documented. FIT does not consider the possibility of documenting an observed release to air to be likely. (ref. NEESA-PA) A-2 The potential for gas release was calculated using the former landfill as the primary source for a potential release to air. Since landfills have not been sampled to determine what contaminants are of concern or if biogas is being released, the value is a projection. (ref. NEESA-PA) A-3The potential for particulate release was calculated using the former landfill and former sludge disposal areas as the primary sources for a potential release to air. Sludge disposal areas are documented to be contaminated (ref. NEESA-PA) The types of wastes and contaminants deposited on site are mostly unknown. The value was determined based on a worst-case situation. (ref. NEESA-PA) A-5 Value was based on the projected Hazardous Waste Quantity of all identified areas of contamination from the NEESA-PA available to air pathway. (ref. NEESA-PA) Quantity Value Waste 16,000 cubic yards landfill 6.4 1.3 44,200 square feet contaminated soil Total 7.7 The nearest residents are assumed to be located within 0.125 miles. A-6 (ref. NEESA-PA) A-7 Population of surrounding areas. (ref. GEMS) A-8 Designated recreation areas are located within 0.5 miles of areas of contamination. The recreation areas include a playground and parks. (ref. NEESA-PA) Three endangered species are known to occasionally use the site. A-9 (ref. NEESA-PA) he/tins/rat